T920 30 Channels

DMX512 Decoder

User Manual

Before using this controller, please read this notebook carefully.

- **Instructions**

Thank you for choosing our T920 DMX512 constant voltage decoder. Before installing and using it, please read this notebook carefully to ensure fully understand the functions and characters of the production to avoid the unnecessary damage.

- **Install direction**

1. Please avoid the mine field, strong magnetic field and high voltage when you install.
2. Ensure the connection is right, the positive, negative polarity, signal lines and RGB Output lines must be defined consistent to the user manual.
3. Please install the controller in well-ventilated places to ensure moderate temperature condition.
4. Input voltage is from DC 12v to 24v; please choose the right electrical source.
5. Prohibit live wiring, check the lead wiring is correct, and then work!
6. If any problems do not make unauthorized repairs, any doubts please contact your local supplier.

This manual applies only to T920 DMX512 controller.

- **After-sale services**

Warranty of this product is one year, in this period we guarantee repairing or replacement service with no charge if it is normally used according to the instruction.

If the customer does not follow the instructions and following provisions in this manual, which results in product damage, the supplier is not responsible for any problems arising and defects, even in the warranty period, maintenance costs borne by the customer.

1. Damage caused by wrong operation, such as not according to the using specification.
2. Damage caused by wrong connection, removing, servicing and changing electro circuit and exchanging the CMOS chip privately.
3. Damage caused by transportation, shock, fall after purchase.
4. Damage caused by earthquake, fire, flood, lightning strike and abnormal voltage.
5. Damage caused by negligence or improper maintenance, such as storage at high temperature and humid environment, vicinity of hazardous chemical substances.
6. Replacement of products.

This manual applies only to this product of our company, subject to changes without notice.

- **Introduction**

Welcome to use T920（RGB）DMX512 30 channels decoder. This production uses advanced micro-electronics control technique, converts the international standard digital control signal into virtual control signal. Having 30 separate channels, each channel can realize 256 levels brightness adjustment. Through dial up the state of the “10” can choose DMX working mode or Manual working mode. In the manual working mode, it can help you test your wire connection better. Use this decoder, with other DMX master controller or DMX512 control plat, the user can make a complete controlling system for led lamps.

1. Specifications

Input voltage	DC12V~DC24V
Max load current	2A/CH×30CHs
Max load power	720W (12V)/1440W (24V)
Output grey scale	256 levels
Signal input	DMX512/1990
Signal output	3*10 CHs CV PWM
Output DMX address	3*10
Product dimension	L385×W138×H45mm

2. Function

(1) 30 channels output to realize the connection of single color or multiple-color lamps;

(2) 0~100% brightness dimming, 256-level grey scale each channel;

(3) Max load current of each path reaches to 2A and a total of 60A for 30 paths;

(4) International standard DMX512 output protocol, decoding switch decides the protocol address.

(5) 8-color static mode, only valid in manual working mode.

3. Mode direction

T920 (RGB) DMX512 constant voltage decoder has DMX512 mode and manual working mode. In DMX512 mode，this decoder get the 30 continuous data units which match to the address set up already from the DMX512 protocol and then output control signals.

4. Structure

Decoding switch:

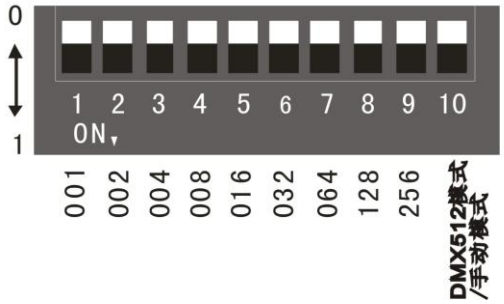


图1

Only stirring of the No.1-9 keys can work. Stir No 10 to change working mode.

R、G、B output ports:

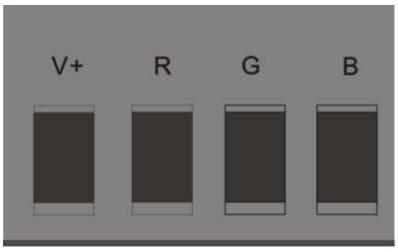


图2

5. Decoder's use-method

If switch is up, the value is 0. On the contrary, value is 1

As T920 is a decoder of 30 channels, so in the DMX512 system, one should use 30 continuous address units to set up the address through the dip switch.

Switches without work as follows:

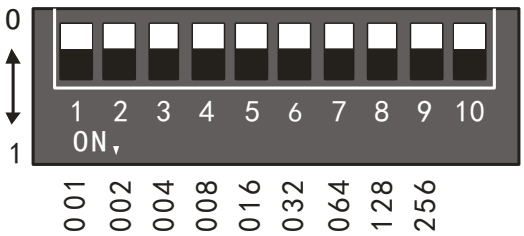


图4

Code value is 0 when it doesn't work.

When the first key is pressed down, the value is 1; others are 0, as chart 5:

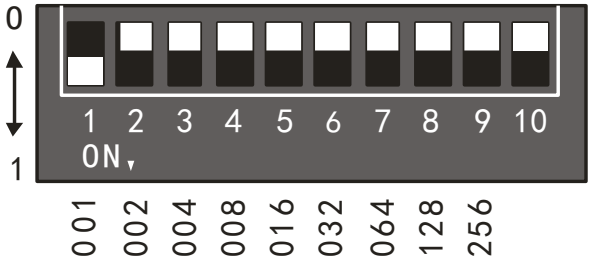


图5

Code value is 1.

The first, third, fourth key are pressed down as follows:

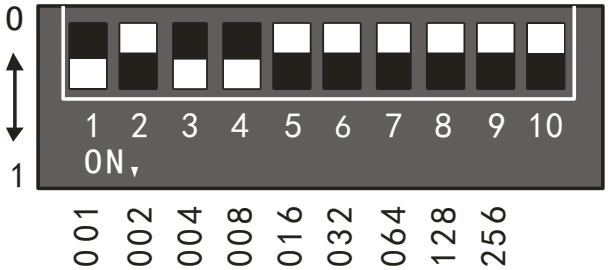


图6

Value of decoding is $1\times2^0+ 0\times2^1+ 1\times2^2+ 1\times2^3 = 13$

The decoding computational formula as follows:

Value of first switch$\times2^0$+ value of second switch$\times2^1$+ value of third switch$\times2^2$+ value of fourth switch$\times2^3$ + value of fifth switch x 2^4+ value of sixth switch$\times2^5$+ value of seventh switch$\times2^6$+ value of eighth switch$\times2^{7+}$ + value of ninth switch$\times2^8$=decoding value

Following chart is comparison of decoding value and switch, decoding the shadow code according to following chart

Manual working mode

Stir switch 10 =0, this is manual working mode

Stir switch 10 =0, this is DMX working mode

Key No.1~9, the function as follows:

P1: static red

P2: static green

P3: static blue

P4: static yellow

P5: static cyan

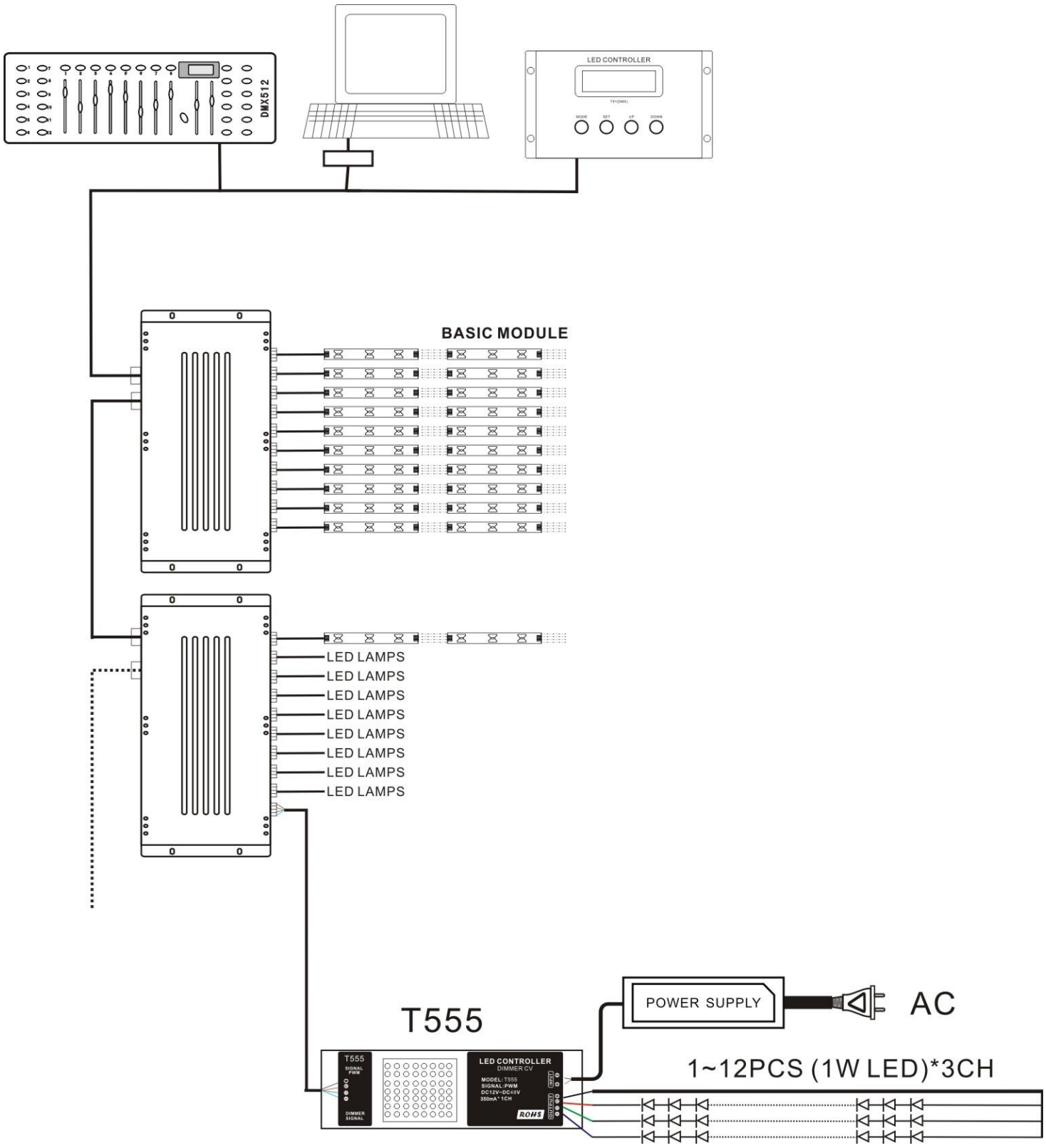
P6: static purple

P7: static yellow

P8: static yellow

P9: Static black

6. System connection diagram



DMX Address Setting Table

DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
100000000	001	001101010	172	111010101	343
010000000	002	101101010	173	000110101	344
110000000	003	011101010	174	100110101	345
001000000	004	111101010	175	010110101	346
101000000	005	000011010	176	110110101	347
011000000	006	100011010	177	001110101	348
111000000	007	010011010	178	101110101	349
000100000	008	110011010	179	011110101	350
100100000	009	001011010	180	111110101	351
010100000	010	101011010	181	000001101	352
110100000	011	011011010	182	100001101	353
001100000	012	111011010	183	010001101	354
101100000	013	000111010	184	110001101	355
011100000	014	100111010	185	001001101	356
111100000	015	010111010	186	101001101	357
000010000	016	110111010	187	011001101	358
100010000	017	001111010	188	111001101	359
010010000	018	101111010	189	000101101	360
110010000	019	011111010	190	100101101	361
001010000	020	111111010	191	010101101	362
101010000	021	000000110	192	110101101	363
011010000	022	100000110	193	001101101	364
111010000	023	010000110	194	101101101	365
000110000	024	110000110	195	011101101	366
100110000	025	001000110	196	111101101	367
010110000	026	101000110	197	000011101	368
110110000	027	011000110	198	100011101	369
001110000	028	111000110	199	010011101	370
101110000	029	000100110	200	110011101	371
011110000	030	100100110	201	001011101	372
111110000	031	010100110	202	101011101	373
000001000	032	110100110	203	011011101	374
100001000	033	001100110	204	111011101	375
010001000	034	101100110	205	000111101	376
DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
110001000	035	011100110	206	100111101	377
001001000	036	111100110	207	010111101	378
101001000	037	000010110	208	110111101	379

011001000	038	100010110	209	001111101	380
111001000	039	010010110	210	101111101	381
000101000	040	110010110	211	011111101	382
100101000	041	001010110	212	111111101	383
010101000	042	101010110	213	000000011	384
110101000	043	011010110	214	100000011	385
001101000	044	111010110	215	010000011	386
101101000	045	000110110	216	110000011	387
011101000	046	100110110	217	001000011	388
111101000	047	010110110	218	101000011	389
000011000	048	110110110	219	011000011	390
100011000	049	001110110	220	111000011	391
010011000	050	101110110	221	000100011	392
110011000	051	011110110	222	100100011	393
001011000	052	111110110	223	010100011	394
101011000	053	000001110	224	110100011	395
011011000	054	100001110	225	001100011	396
111011000	055	010001110	226	101100011	397
000111000	056	110001110	227	011100011	398
100111000	057	001001110	228	111100011	399
010111000	058	101001110	229	000010011	400
110111000	059	011001110	230	100010011	401
001111000	060	111001110	231	010010011	402
101111000	061	000101110	232	110010011	403
011111000	062	100101110	233	001010011	404
111111000	063	010101110	234	101010011	405
000000100	064	110101110	235	011010011	406
100000100	065	001101110	236	111010011	407
010000100	066	101101110	237	000110011	408
110000100	067	011101110	238	100110011	409
001000100	068	111101110	239	010110011	410
101000100	069	000011110	240	110110011	411
011000100	070	100011110	241	001110011	412
111000100	071	010011110	242	101110011	413
000100100	072	110011110	243	011110011	414
100100100	073	001011110	244	111110011	415
010100100	074	101011110	245	000001011	416
DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
110100100	075	011011110	246	100001011	417
001100100	076	111011110	247	010001011	418
101100100	077	000111110	248	110001011	419
011100100	078	100111110	249	001001011	420

111100100	079	010111110	250	101001011	421
000010100	080	110111110	251	011001011	422
100010100	081	001111110	252	111001011	423
010010100	082	101111110	253	000101011	424
110010100	083	011111110	254	100101011	425
001010100	084	111111110	255	010101011	426
101010100	085	000000001	256	110101011	427
011010100	086	100000001	257	001101011	428
111010100	087	010000001	258	101101011	429
000110100	088	110000001	259	011101011	430
100110100	089	001000001	260	111101011	431
010110100	090	101000001	261	000011011	432
110110100	091	011000001	262	100011011	433
001110100	092	111000001	263	010011011	434
101110100	093	000100001	264	110011011	435
011110100	094	100100001	265	001011011	436
111110100	095	010100001	266	101011011	437
000001100	096	110100001	267	011011011	438
100001100	097	001100001	268	111011011	439
010001100	098	101100001	269	000111011	440
110001100	099	011100001	270	100111011	441
001001100	100	111100001	271	010111011	442
101001100	101	000010001	272	110111011	443
011001100	102	100010001	273	001111011	444
111001100	103	010010001	274	101111011	445
000101100	104	110010001	275	011111011	446
100101100	105	001010001	276	111111011	447
010101100	106	101010001	277	000000111	448
110101100	107	011010001	278	100000111	449
001101100	108	111010001	279	010000111	450
101101100	109	000110001	280	110000111	451
011101100	110	100110001	281	001000111	452
111101100	111	010110001	282	101000111	453
000011100	112	110110001	283	011000111	454
100011100	113	001110001	284	111000111	455
010011100	114	101110001	285	000100111	456
DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
110011100	115	011110001	286	100100111	457
001011100	116	111110001	287	010100111	458
101011100	117	000001001	288	110100111	459
011011100	118	100001001	289	001100111	460
111011100	119	010001001	290	101100111	461
000111100	120	110001001	291	011100111	462

100111100	121	001001001	292	111100111	463
010111100	122	101001001	293	000010111	464
110111100	123	011001001	294	100010111	465
001111100	124	111001001	295	010010111	466
101111100	125	000101001	296	110010111	467
011111100	126	100101001	297	001010111	468
111111100	127	010101001	298	101010111	469
000000010	128	110101001	299	011010111	470
100000010	129	001101001	300	111010111	471
010000010	130	101101001	301	000110111	472
110000010	131	011101001	302	100110111	473
001000010	132	111101001	303	010110111	474
101000010	133	000011001	304	110110111	475
011000010	134	100011001	305	001110111	476
111000010	135	010011001	306	101110111	477
000100010	136	110011001	307	011110111	478
100100010	137	001011001	308	111110111	479
010100010	138	101011001	309	000001111	480
110100010	139	011011001	310	100001111	481
001100010	140	111011001	311	010001111	482
101100010	141	000111001	312	110001111	483
011100010	142	100111001	313	001001111	484
111100010	143	010111001	314	101001111	485
000010010	144	110111001	315	011001111	486
100010010	145	001111001	316	111001111	487
010010010	146	101111001	317	000101111	488
110010010	147	011111001	318	100101111	489
001010010	148	111111001	319	010101111	490
101010010	149	000000101	320	110101111	491
011010010	150	100000101	321	001101111	492
111010010	151	010000101	322	101101111	493
000110010	152	110000101	323	011101111	494
100110010	153	001000101	324	111101111	495
010110010	154	101000101	325	000011111	496
DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR	DIP SWITCH	DMX ADDR
123456789	NUMBER	123456789	NUMBER	123456789	NUMBER
110110010	155	011000101	326	100011111	497
001110010	156	111000101	327	010011111	498
101110010	157	000100101	328	110011111	499
011110010	158	100100101	329	001011111	500
111110010	159	010100101	330	101011111	501
000001010	160	110100101	331	011011111	502
100001010	161	001100101	332	111011111	503
010001010	162	101100101	333	000111111	504

110001010	163	011100101	334	100111111	505
001001010	164	111100101	335	010111111	506
101001010	165	000010101	336	110111111	507
011001010	166	100010101	337	001111111	508
111001010	167	010010101	338	101111111	509
000101010	168	110010101	339	011111111	510
100101010	169	001010101	340	111111111	511
010101010	170	101010101	341		
110101010	171	011010101	342		